ABSTRACT OF THE DISCLOSURE

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A silicon substrate (1) includes a neutron detecting part comprising a 10 B diffusion layer which includes boron introduced therein containing isotopes 10 B, an α -ray detecting part including a pn junction (13) defined by a p well (11) and an n well (12), and an analytic circuit part for analyzing electric charge generated in the pn junction (13), all of which are provided on a single chip. An α -ray generated in the 10 B diffusion layer (10) as a result of entering of neutrons generates electron-hole pairs (16) in a depletion layer of the pn junction (13). The analytic circuit part collects and analyzes electric charge of the electron-hole pairs (16). On the basis of the result of analysis, the volume of neutrons entering into the pn junction (13) is specified.